


# Development and Validation of an Instrument to Assess Social Work Students' Perceptions, Knowledge, and Attitudes About Human Trafficking Questionnaire (PKA-HTQ): An Exploratory Study

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## Abstract

**Objective:** This study sought to develop and evaluate the psychometric properties of a tool designed to assess social work students' knowledge of and perceptions and attitudes toward human trafficking. To achieve this aim, the Perceptions, Knowledge, and Attitudes toward Human Trafficking Questionnaire (PKA-HTQ) was developed and its psychometric properties were evaluated. Specifically, the factor structure and the internal consistency of the PKA-HTQ were evaluated. **Methods:** Exploratory factor analysis (EFA) and a replication EFA were conducted on two independent samples of university students, an initial validation ( $n = 325$ ), and cross-validation ( $n = 212$ ) sample. **Findings:** The EFA revealed a three-factor structure, that is, self-appraisal of knowledge/skills ( $\alpha = .89$ ), worldview ( $\alpha = .78$ ), and help-seeking behavior ( $\alpha = .66$ ); this three-factor structure was supported by replication EFA. **Conclusion:** The PKA-HTQ questionnaire shows promise as a meaningful, potentially reliable and valid measure.

## Keywords

human trafficking, social work, social work pedagogy, exploratory factor analysis, replication exploratory factor analysis

Despite historical abolitionist efforts and popularly held beliefs that slavery is of the past, modern-day slavery, also referred to as human trafficking, has reemerged as a major global problem (Hodge & Lietz, 2007; Nsonwu, Busch-Armendariz, & Cook-Heffron, 2014; Rafferty, 2013). Human trafficking generally is considered a burgeoning globalized criminal industry with major human rights implications (Reid, 2012). The United States Department of State (2010) Trafficking in Persons Report estimated that globally, 27 million women, children, and men are forced into commercially exploitive labor and/or sex activity. Global profits from human trafficking are also estimated at US\$32 billion (International Labor Organization, 2008), with every nation having origin, transient, and destination trafficking characteristics (Hodge, 2008). Here, place of origin nations are those where trends in globalization have created a readily available supply of victims due to economic marginalization and poverty, social isolation, social services breakdown, political instability, educational inopportunities, and rampant violence particularly targeted at women and minors

(Gekht, 2008; Reid, 2012; Scarpa, 2006). Transit means that victims might move through one nation to another or simply be trafficked within rather than across international borders (Siskin & Wylter, 2010). Finally, destination nation refers to wealthy, industrialized nations where there is high demand for victim labor or commercial sex acts (Hodge, 2008). Similar to many Western European nations, the United States is a top-ranking destination nation for trafficked victims, with high demand stemming from a culturally tolerated commercial sex industry (Kotrla, 2010) and undocumented labor (Chacón, 2006).

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Despite the existence of extensive policy and contemporary academic inroads to understanding human trafficking as a social phenomenon, general knowledge and understanding regarding the realities of human trafficking continue to elude the public. As a profession, social workers and human service providers broadly recognize human trafficking as a complex U.S. domestic and transnational social problem involving force, fraud, or coercion for the purpose of labor and/or sex-based commercial exploitation (Busch-Armendariz, Nsonwu, & Cook Heffron, 2011). Human trafficking also has increased saliency in the social science fields as practitioners and providers act as first responders trafficking incidences as well as provide ongoing support to human trafficking victims. Both labor and sex trafficking victims can experience restriction of movement and food, threats to life and family members, and physical violence prompting short- and long-term health and psychological problems (Rafferty, 2013). Victims are in need of multiple services ranging from protection by law enforcement and medical assessment for posttraumatic stress disorder and sexually transmitted diseases to support through legal aid, facilitation of social services, and mental health assistance (Boxill & Richardson, 2007; Faulkner, Mahapatra, Cook Heffron, Nsonwu, & Busch-Armendariz, 2013).

Interdisciplinary collaboration, therefore, is crucial to establishing and sustaining complex case management and service delivery systems. Moreover, social workers frequently assume a leadership position in facilitating victim needs as the role of the case manager hinges on the acquisition of multiple services. As professionals who inherently value ecological and victim-centered approaches to assisting individuals impacted by abuse and trauma, social workers are adept at coordinating the partnership between and among professionals who serve victims of human trafficking (Busch-Armendariz, Nsonwu, & Cook Heffron, 2014) at policy, community and educational advocacy, and individual case levels (Hodge & Lietz, 2007).

### *Role of Social Work Education in Addressing Human Trafficking*

Social workers are profoundly aware of the effects globalization has had on divergent geopolitical landscapes, work environments, and social spaces in the new millennium. Numerous social work schools and departments offer human rights-orientated study abroad programs and internships for students, collaborate with international organizations working to alleviate human trafficking, and offer courses on the topic. Team teaching, both abroad and in an interdisciplinary manner, open up new pedagogical frameworks and opportunities for learning. An interdisciplinary model to teach human rights, incorporative of disciplines such as law, medicine, social policy, education, economics, conflict studies, and social work could strengthen a global examination of human trafficking.

It is incumbent that the social work profession acknowledges its key leadership role and takes steps to augment its educational curriculum to address this evolving social problem. The issue of human trafficking has slowly begun to emerge

in the social work literature. At The Society for Social Work and Research 2014 18th Annual Conference, for example, Choi, Elkins, Miller, and Okech (2014, January) reported that between 2000 and 2011, 33 articles covering human trafficking had been published in 14 social work journals. Yet, when compared to other advancing social problems that have surfaced in the literature such as child abuse, substance abuse, domestic violence, and disabilities, this number seems relatively small. The social work profession has been acutely aware of developing social justice concerns that call contemporary human rights issues to our attention—historically some of these emerging foci have been child abuse/neglect, gerontology, domestic violence, disability, racial and queer diversity issues, and feminist perspectives. Despite growing case loads and the Council on Social Work Education (CSWE) Educational Policy and Accreditation Standards requirement of social work curriculum, material on human trafficking has only been gradually incorporated into social work education.

There are three suggested development models for integrating specific content into course or program curriculum—infused, dedicated, or a combination of both (Bean & Krcek, 2012; Gourdine & Sanders, 2003). The benefit of an infused model is that the introduction of a new topic is presented throughout the program curricula, exposing a larger number of students to new information (Bean & Krcek, 2012; Knopf, 1996). The dedicated model typically is reserved for select courses (Bean & Krcek, 2012; Mama, 2001) with advantages of this model resting on the instructor's expertise and a relationship developed with students over time. Many social work education programs choose a combination of the infused and dedicated integration model to introduce highly specific knowledge and skills.

Social work curriculum needs to comprehensively address the issue of modern day slavery in understanding the multifaceted root causes, evidence-based interventions, and humanitarian responses. In order to be culturally competent and ethical, practitioners and social work students need a working knowledge of human trafficking that includes best practices for working with this vulnerable population. Since this area of social work is especially value laden, social work students also need assistance and support to examine their personal attitudes and perceptions. Moreover, this self-reflection must be in conjunction with a thorough analysis of the social work Code of Ethics to help scaffold learning and introspection.

Social work has an important place in the generation of knowledge about human trafficking. The purpose of the current study was to develop and evaluate the psychometric properties of a tool to assess social work students' knowledge of and perceptions and attitudes toward human trafficking. Given the absence of validated measures, the Perceptions, Knowledge, and Attitudes toward Human Trafficking Questionnaire (PKA-HTQ) was developed. The construction of the PKA-HTQ began as an organic, inductive process. As social work educators and experienced field researchers in the area of human trafficking, we recognized the importance of preparing students to address contemporary social issues. Part of this

preparation entails an understanding of students' knowledge, perceptions, and attitudes about value-laden social issues such as human trafficking. This was the catalyst for the development of our questionnaire. Tools to assess these constructs would support the preparation of pedagogical design and curriculum development in social work and support fundamental tenets of the social work profession. The CSWE, Educational Policy 2.1.1—*Identify as a professional social worker and conduct oneself accordingly* and our knowledge of social work and human trafficking, guided the development of the questionnaire. The Balderas study, *Human Trafficking: A Comparative Analysis of Perceptions of College Students and Police Officers* (2006), served as an additional framework for the development and construction of the PKA-HTQ. The development of the PKA-HTQ and the methodology of evaluating its psychometric properties, including exploration of its factor structure, internal consistency, and the replicability of the factor structure are described subsequently.

## Method

### Development of the PKA-HTQ

The PKA-HTQ is an original 32-item instrument designed to examine social work students' knowledge, perceptions, and attitudes regarding human trafficking and human trafficking victims. Of the 32 questionnaire items, 8 were adapted from a human trafficking survey developed by Balderas (2006). The 8 adapted items are denoted with an asterisk on the original 32-item survey questionnaire (see Table 1). Fifty items were originally developed based on the first author's research and scholarship in human trafficking, a review of instruments that measure knowledge, attitudes, and/or perceptions of social work students, and Balderas' (2006) human trafficking survey developed to compare college students and police officers' perceptions of human trafficking. These initial items were reviewed by two coauthors, also content experts, for their content and face validity as well as edited for clarity and conciseness. A 32-item questionnaire was the result.

The 32-item instrument has two sections, that is, a demographic section with 6 items and a section with 26 Likert-style items on perceptions, knowledge, and attitudes regarding human trafficking. In this section of the instrument, participants indicated their level of agreement or disagreement with 26 statements (on a 5-point scale ranging from *strongly agree* to *strongly disagree*). Sample items included "Human trafficking is a problem for society at large"; "All victims of human trafficking are receptive to receiving social services"; and "I know enough about human trafficking to serve human trafficking victims." The original 32-item survey questionnaire is located in Table 1.

### Research Design and Data Collection Procedures

A two-site cross-sectional survey design and convenience sampling technique were used in the current study. Graduate and undergraduate social work students attending two public

universities in the United States participated in the study. University Institutional Review Boards at both universities reviewed and approved this study. Participants were recruited by social work faculty in undergraduate and graduate social work courses and symposia. At each site, the PKA-HTQ was distributed in social work classes and social work sponsored symposia. The questionnaire included a cover letter, which outlined the purpose of the study, benefits of participating in the study, and ethical issues related to anonymity and voluntariness. Participation in the study was voluntary, and participants did not receive incentives or compensation for their participation. Basic information was collected on gender, age, academic classification (i.e., sophomore, junior, graduate student, etc.), major, and prior training or professional work experience in dealing with human trafficking. All surveys were anonymous. Questionnaire data were collected over two academic semesters.

### Sample Characteristics

Social work students attending two public universities in the United States participated; one university located in a southwestern region (Site 1), a predominately White institution, had 327 participants and one located in a southeastern region (Site 2), a historically Black university, had 214 participants. Separate data collection sites allowed for an external replicability analysis to be conducted. Of the 327 participants in Site 1, designated the initial validation sample, two participants did not complete over 50% of the 26 Likert-type items, yielding a final total of 325 completed surveys. Of the 214 participants in Site 2, the cross-validation sample, two participants did not complete over 50% of the 26 items, yielding a final total of 212 surveys.

As summarized in Table 2, females comprised the majority of the participants in both the initial validation and the cross-validation samples (83% and 84%, respectively). The majority of the participants reported that they were social work majors, 92% (initial validation sample) and 84% (cross-validation sample). A majority of the participants in the initial validation sample were graduate students (57%) and a slight majority of participants in the cross-validation sample were undergraduate students (51%).

### Analytic Approach

The evaluation of the psychometric properties of the questionnaire began with an examination of missing data utilizing the SPSS Version 21, statistical package, Missing Value Analysis. The distributional properties of each of the 26 Likert-type scale items (i.e., mean, standard deviations, skewness, and kurtosis) were also examined. Data were screened for multivariate normality and outliers. Following these item-level analyses, a preliminary factor analysis was conducted to determine if the items could be factor analyzed. The factorability of the data sets was evaluated by examining the correlation matrix, Bartlett's test of sphericity, and two measures of sampling adequacy (Kaiser-Meyer-Olkin [KMO] test and Measure of

**Table 1.** Original 32-Item Survey.**Survey to Assess the Perceptions, Knowledge and Attitudes of Social Work Students Regarding Human Trafficking**

For the purpose of this survey, **human trafficking** is defined as: "The recruitment, transportation, transfer, harboring or receipt, of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of abuse or power or of position of vulnerability or of the giving or receiving or payments of benefits to achieve the consent of person having control over the other person for the purpose of exploitation." (United Nations)

**Demographic Questions**

Please circle your responses

- 1. Gender:** Female Male
- 2. Age:** 18-22 23-27 28-32 33-37 38-42 43-47 48-over
- 3. Major:** Social Work Non-Social Work: \_\_\_\_\_
- 4. Classification:** Freshman Sophomore Junior Senior Graduate
- 5. I have prior training in human trafficking.\*** Yes No
- 6. I have dealt with human trafficking in my professional responsibilities.\*** Yes No

Please indicate your degree of agreement or disagreement with the following statements. If you are uncertain or undecided circle "neutral."

- 7. Human trafficking is a problem for society at large.\***  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 8. Human smuggling is synonymous with human trafficking.\***  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 9. Prostitution is synonymous with human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 10. Human trafficking is a worldwide problem.\***  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 11. There are two categories of human trafficking – labor and sex.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 12. Human trafficking primarily involves individuals from other countries. \***  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 13. Social work services should be readily available to every victim of human trafficking. \***  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 14. American citizens are not victims of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 15. I am able to empathize with victims of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 16. I know enough about human trafficking to serve human trafficking victims.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 17. I have a working knowledge of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 18. Human trafficking is a growing problem in America.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 19. I am able to assess whether a person is a victim of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 20. I know the risk factors for victims of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 21. All victims of human trafficking are receptive to receiving social services.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree
- 22. My social work curriculum has adequately prepared me to work with victims of human trafficking.**  
Strongly Disagree Disagree Neutral Agree Strongly Agree

(continued)

**Table 1.** (continued)

<b>23. Greater funding should be allocated to assist human trafficking victims.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>24. I know how to provide long term counseling for human trafficking victims.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>25. I have a basic understanding of the different needs of human trafficking victims.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>26. I have an understanding of the psychological effects of human trafficking that allows me to effectively work with victims.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>27. I would be reluctant to provide social services to a victim of trafficking because of my personal beliefs.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>28. I can appropriately advise human trafficking victims about available services and resources.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>29. I am aware of the safety concerns of social workers when working with human trafficking victims.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>30. Women and children are the primary victims of human trafficking.*</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>31. Internationally trafficked victims use their position to gain secure legal status in the US.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
<b>32. All human trafficking victims voluntarily disclose their situation to professionals.</b>	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Note. For space purposes, the scale values that coincide with each response category are not included. Survey responses: 1= strongly disagree; 2=disagree; 3= neutral; 4=agree; 5=strongly agree.

\*Items adapted from Balderas' (2006) Human Trafficking Survey.

**Table 2.** Demographic Characteristics of Participants by Sample.

	Initial Validation Sample (n = 325)		Cross-Validation Sample (n = 212)	
	n	%	n	%
Gender				
Female	270	83.1	178	84.0
Male	53	16.3	30	14.2
Age				
18–22	122	37.5	97	45.8
23–27	127	39.1	58	27.4
28–32	49	15.1	14	6.6
33–37	14	4.3	13	6.1
38–42	7	2.2	12	5.7
43–47	4	1.2	6	2.8
48 and over	2	.6	11	5.2
Major				
Social work	300	92.3	178	84.0
Non Social work	22	6.8	33	15.6
Classification				
Undergraduate	140	43.1	110	51.9
Graduate	184	56.6	102	48.1
Prior training				
Yes	32	9.8	24	11.3
No	293	90.2	187	88.2
Experience				
Yes	24	7.4	13	6.1
No	301	92.6	195	92.0

Sampling Adequacy). The correlation matrices were examined for correlations among items (criterion, .30 and above), a significant Bartlett's test of sphericity, a KMO statistic, and a measure of sampling adequacy (MSA) criterion of coefficients at .60 or above (Pett, Lackey, & Sullivan, 2003; Tabachnick & Fidell, 2012).

Given that the aim of the current study was to evaluate the factor structure of the PKA-HTQ and assess the replicability of the factor structure, data analyses were conducted separately on each sample. Moreover, the steps for conducting an exploratory factor replicability analysis outlined by Osborne and Fitzpatrick (2012) were followed: (1) An exploratory factor analysis (EFA) using the same extraction and rotation methods was conducted on each sample (principal axes extraction and promax rotation methods were used in the current study); (2) A table listing each item's factor loadings was created; and (3) The factor loadings and structures were compared. All data were analyzed using SPSS Statistical Software Version 21.0.

*Missing data analysis.* SPSS 21 Missing Value Analysis was used to examine patterns of missing values in the data sets. Across samples, none of the items had a missing value greater than 3%. Missing values were imputed using the Expectation Maximization (EM) algorithm through SPSS Missing Value Analysis (MVA) after finding no statistically significant deviation from randomness using Little's missing completely at random (MCAR) test.

**Table 3.** Item Analysis/Descriptive Statistics.

Item No.	Item	Initial Validation (Site 1)		Cross-Validation (Site 2)	
		M	SD	M	SD
7	A problem for society at large	4.49	.633	4.51	.529
8	Synonymous with smuggling	3.02	1.16	3.78	.962
9	Synonymous with prostitution	2.69	1.15	3.66	1.10
10	A worldwide problem	4.64	.531	4.58	.524
11	Two categories—labor and sex	3.71	.908	4.06	.841
12	Primarily individuals from other countries	2.37	1.04	2.80	1.19
13	Social work services readily available	4.72	.522	4.54	.567
14	American citizens are not victims	1.35	.497	1.51	.727
15	Able to empathize with victims	4.07	.953	3.87	.890
16	Know enough to serve victims	2.30	.971	2.43	.929
17	Working knowledge of human trafficking	2.72	1.05	2.81	1.04
18	A growing problem in America	4.08	.730	4.16	.694
19	Assess whether a person is a victim	2.36	.891	2.49	.942
20	I know the risk factors	2.73	1.07	3.03	1.08
21	Receptive to receiving services	2.04	.792	2.51	1.09
22	Social work curriculum	2.22	.855	2.49	.984
23	Greater funding should be allocated	4.21	.681	4.12	.695
24	Provide long-term counseling	1.90	.789	2.24	.953
25	Understanding of different needs	2.61	1.07	2.97	1.02
26	Understanding of psychological effects	2.55	.986	2.83	1.00
27	Reluctant to provide social services	1.46	.786	1.95	.969
28	Appropriately advise victims	2.43	.969	2.83	1.06
29	Aware of the safety concerns	2.61	1.04	3.11	1.04
30	Women and children primary victims	3.51	.926	3.89	.904
31	Use their position to gain secure legal status	2.37	.913	2.86	.943
32	Voluntarily disclose to professionals	1.64	.733	2.03	1.02

**Assumptions and outliers.** Data were screened for multivariate outliers. With an  $\alpha = .001$  cutoff level, 4 cases in the initial validation sample (Site 1) and 10 cases in the cross-validation sample (Site 2) were identified as multivariate outliers; these cases were deleted and not retained for subsequent analyses. The final sample of cases was 321 and 202, respectively. Item-level analyses were conducted on data from the final sample of cases. The mean and standard deviation of each item are shown in Table 3. Many of the items (variables) were skewed. In the initial validation sample (Site 1), 5 items were negatively skewed and 10 items were positively skewed. In the cross-validation sample (Site 2), 3 items were negatively skewed and 4 items were positively skewed. The positively and negatively skewed items were not transformed, as over half of the items (variables) were nonnormal; a transformation of variables could impact the interpretation and lead to non-replicable results. Moreover, the assumption of multivariate normality is not a stipulation for principal axes (or least squares) approach for EFA (Costello & Osborne, 2005; Floyd & Widaman, 1995), the approach used in the current study.

## Results

### Initial Validation Sample ( $n = 321$ )

**Preliminary EFA.** A preliminary factor analysis was conducted using a principal axis factoring extraction method to estimate

the factorability of the correlation matrix, absence of multicollinearity and singularity, number of factors to extract, and items (variables) to be excluded from subsequent analyses. Principal axis factoring methods were used because (a) the primary purpose of this study was to determine the factor structure and the initial reliability of the PKA-HTQ; (b) the factoring methods are closely aligned with the development of new scales (Worthington & Whittaker, 2006); and (c) normality or data distributional assumptions are not stipulated (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Schmitt, 2011), as many of the variables (items) analyzed in this study were nonnormal.

Initially, the factorability of the 26 items was examined. Initial estimates indicated that 4 of the 26 items (Items 11, 12, 30, and 31) were weakly correlated ( $<.30$ ) among other items in the correlation matrix. Following the steps outlined by Pett, Lackey, and Sullivan (2003) for assessing the characteristics of matrices, these weakly correlated items were dropped from the analysis. An analysis was rerun and the correlation matrix was reexamined. Having deleted 4 items, subsequent analysis indicated that all of the remaining 22 items correlated at  $.30$  or above with at least 1 other item.

The next steps involved evaluating the determinant (R) and examining the Bartlett's test of sphericity. The determinant =  $.000$  indicated that the correlation matrix was a singular matrix, not positive definite, and the Bartlett's test of sphericity was significant,  $\chi^2(231) = 2477.453, p < .01$ , indicating a sufficient

minimum sample size. The last step was to examine the KMO statistic and the MSA values to determine if the KMO statistic and the MSA coefficients were .60 or above. The KMO measure was .87 and the MSA values ranged from .56 to .93. One item, Item 8 (*Human smuggling is synonymous with human trafficking*), had a low MSA value of .56. This item was omitted, an analysis was rerun, and the KMO statistic and the MSA values were reexamined. In omitting Item 8, the individual MSAs were within acceptable range, .63 to .93, and the KMO increased from .87 to .88. In addition to the steps listed previously, multicollinearity, singularity, and outliers among items (variables) were examined. The largest squared multiple correlation (SMC) was .62 and none of the SMCs was one, indicating that multicollinearity and singularity were not a problem in the data set. The lowest SMC among items (variables) was .18 (Item 9), below the recommended value of .30 (Tabachnick & Fidell, 2012). Two additional items (variables) had SMC values below the recommended value, Items 22 and 29. These items were omitted and analyses were conducted on the 18 remaining items (Field, 2009; Pett, Lackey, & Sullivan, 2003). Initial estimates of the 18-item correlation matrix indicated that all the 18 items correlated at least .30 with at least 1 other item. Bartlett's test of sphericity was significant,  $\chi^2(153) = 2195.552, p < .01$ , and the KMO measure of sampling adequacy was .88, with all individual MSA coefficients above .60, therefore supporting the inclusion of each item in the factor analysis.

In the preliminary EFA, two criteria were used to determine the optimal number of factors to extract and retain for rotation for the final EFA: the Cattell Scree plot test (Cattell, 1966) and the Kaiser-Guttman eigenvalue greater than 1 rule (Kaiser, 1960). Results of the initial eigenvalue greater than 1 rule revealed that three factors had eigenvalues over Kaiser's criterion of 1, accounting for 45% of the variance. The scree plot showed a "leveling off" that would justify extracting three factors.

**Final EFA.** A principal factor analysis was conducted on the 18 items with oblique rotation (promax). Oblique methods allow factors to be correlated, and it is reasonable to expect that the perceptions, knowledge, and attitudes regarding human trafficking would overlap, suggesting intercorrelation. Oblique methods are highly recommended because correlations among factors are usually expected in the social sciences and if "factors are truly uncorrelated, orthogonal and oblique rotation produce nearly identical results" (Costello & Osborne, 2005, p. 3).

In the final EFA, items (variables) that (a) had less than the minimum rotated factor loading of .40, (b) a cross-loading of .40 or above, (c) loaded on a factor that did not share the same conceptual meaning, and/or (d) had a low communality value (e.g., less than .30) were subject to deletion. Based on these criteria, the PKA-HTQ was modified through an iterative process of deleting items that failed to meet one or more of the above-listed criteria and conducting successive factor analyses on the remaining items. Through this process, Items 14 (*American citizens are not victims of human trafficking*) and 15 (*I am able to empathize with victims of human trafficking*)

were deleted because they failed to have a primary factor loading of .40, resulting in a final 16-item three-factor solution.

Factor 1 accounted for 29% of the item variance and consisted of 8 items, with coefficients ranging from .62 to .77. It was named *Self-Appraisal of Knowledge/Skills*. Items that clustered on Factor 1 represent students' self-appraisal of their current knowledge-base of human trafficking. They also represent their view of their level of proficiency in the provision of services to human trafficking victims. The second factor accounted for 14% of the item variance and consisted of 5 items, with coefficients ranging from .48 to .77. It was named *Worldview*. The 5 items that clustered on Factor 2 reflect the extent to which human trafficking is viewed as a social problem. While the items that comprised Factor 2 are related to human trafficking, all the items that comprise Factor 3 are related to human traffic victims. The third factor accounted for 5% of the item variance and contained 3 items, with coefficients ranging from .56 to .68. It was named *Help Seeking Behaviors/Personal Beliefs*. Two of the 3 items were related to human trafficking victims' help-seeking behaviors and disclosure, and 1 item was related to religion and the provision of services to human trafficking victims. The factor pattern coefficients of the 16-item three-factor structure and communalities are presented in Table 4.

As shown in Table 5, the factors that correlated the highest were *Worldview* and *Help-Seeking Behavior/Personal Beliefs* ( $r = -.47$ ), followed by *Self-Appraisal of Knowledge/Skills* and *Worldview* ( $r = .36$ ). These correlations were significant. The factors that correlated the lowest and not statistically significant were *Self-Appraisal of Knowledge/Skills* and *Help Seeking Behavior/Personal Beliefs* ( $r = -.09$ ).

**Internal consistency reliability.** Coefficient  $\alpha$ s were computed to assess the internal consistency of the overall 16 Likert-type scale items of the PKA-HTQ and its three subscales. The overall questionnaire had an acceptable  $\alpha$  of .80. The subscale *Self-Appraisal of Knowledge/Skills* had an  $\alpha$  of .89, indicating high reliability (internal consistency). The subscale *Worldview* had an  $\alpha$  of .78, indicating satisfactory reliability. The subscale *Help-Seeking Behavior/Personal Beliefs* had an  $\alpha$  of .66, indicating low reliability.

### Cross-Validation Sample (n = 202)

The focus of this part of the study was to cross-validate the factor structure of the PKA-HTQ. Replication EFA was used to confirm the factor structure reliability and validity of the questionnaire. A replication EFA was selected over confirmatory factor analysis because the PKA-HTQ evaluated in this study is not at the stage of development where invariance analysis via confirmatory factor analysis is appropriate. Moreover, "replication within EFA ... adds value to EFA analyses in that it helps indicate the extent to which these models are likely to generalize to the next data set, and also in helping to further identify volatile or problematic items" (Osborne & Fitzpatrick, 2012, p. 7). The EFA methods and procedures used on the data

**Table 4.** Factor PKA-HTQ Replicability Analysis, Pattern Matrix Rotated to the Promax Criterion, Communalities (h<sup>2</sup>), Squared Differences, Cronbach  $\alpha$  Estimates.

Item No.	Item	Initial Validation Sample Site 1				Cross-Validation Sample Site 2				Squared Difference
		h <sup>2</sup>	1	2	3	h <sup>2</sup>	1	2	3	
7	A problem for society	.498	.077	<b>.769</b>	.094	.566	-.045	<b>.757</b>	-.031	0.0001
10	A worldwide problem	.426	.124	<b>.661</b>	-.050	.499	-.079	<b>.741</b>	.034	0.0006
13	Social work services	.324	-.061	<b>.484</b>	-.174	.335	.007	<b>.546</b>	-.084	0.0384
16	Know enough to serve	.603	<b>.768</b>	-.047	-.151	.529	<b>.778</b>	-.132	-.316	0.0001
17	Working knowledge	.508	<b>.619</b>	.133	-.129	.524	<b>.723</b>	.001	-.283	0.0108
18	A problem in America	.471	.147	<b>.578</b>	-.083	.430	.055	<b>.607</b>	-.084	0.0008
19	Assess	.438	<b>.659</b>	.017	.063	.520	<b>.767</b>	-.089	-.112	0.0031
20	I know the risk factors	.622	<b>.669</b>	.274	.139	.408	<b>.613</b>	.076	-.042	0.0021
21	Receptive to service	.461	-.054	.026	<b>.684</b>	.426	.024	.017	<b>.662</b>	0.0048
22	Curriculum <sup>a</sup>	—	—	—	—	.362	<b>.446</b>	.034	.319	—
23	Greater funding	.462	.090	<b>.644</b>	.003	.398	.116	<b>.568</b>	-.043	0.0058
24	Provide counseling	.511	<b>.768</b>	-.265	-.026	.592	<b>.586</b>	-.004	.399	0.0331
25	Understand needs	.594	<b>.749</b>	.068	.151	.540	<b>.678</b>	.063	.128	0.0050
26	Understand effects	.550	<b>.738</b>	.016	.029	.570	<b>.708</b>	.032	.132	0.0009
27	Reluctant to provide	.321	-.003	-.017	<b>.558</b>	.366	-.012	-.244	<b>.487</b>	0.0050
28	Advise victims	.438	<b>.692</b>	-.129	-.082	.452	<b>.522</b>	.104	.295	0.0289
32	Voluntarily disclose	.422	.069	-.151	<b>.573</b>	.512	-.045	-.079	<b>.694</b>	0.0146
	Eigenvalue		5.16	2.79	1.29		4.96	3.23	1.40	
	$\alpha$		.89	.78	.66		.87	.79	.71	

Note. PKA-HTQ = Perceptions, Knowledge, and Attitudes About Human Trafficking Questionnaire. Coefficients greater than  $|\lambda| \geq .40$  are in bold and retained for that factor.

<sup>a</sup>Item 22 did not load on any factors in the initial validation sample.

**Table 5.** Factor Correlation Matrix for the Three-Factor Solution (Initial Validation Sample).

	Self-Appraisal Knowledge/Skills	Worldview	Help-Seeking Behavior
Self-appraisal knowledge/skills	1.000	.360**	-.092
Worldview	.360**	1.000	-.467**
Help-seeking behavior	-.092	-.467**	1.000

\*\* $p < .01$ .

set of the initial validation sample were replicated with the data set of the cross-validation sample.

**Preliminary EFA.** A preliminary principal axis factoring with a promax rotation was conducted to estimate the factorability of correlation matrices, absence of multicollinearity, number of factors, and variables to be excluded from subsequent analyses. Following the steps outlined by Pett et al. (2003) for assessing the characteristics of matrices, as well as examining the multicollinearity, singularity, and outliers among items (variables), through an iterative process the following items were excluded from subsequent analyses: Items 8, 9, 11, 12, 15, 29, and 30. Similar to results found in the initial development sample, results of the initial eigenvalue greater than 1 indicated that three factors had eigenvalues over Kaiser's criterion of 1, accounting for 46% of the variance. The scree plot showed a leveling off that would justify extracting three factors.

**Final EFA.** Principal axis factoring with oblique rotation (promax) was conducted on the 19 items. The KMO measure was .86, and all MSA coefficients were above .60. The Bartlett's test of sphericity was significant,  $\chi^2(171) = 11442.266$ ,  $p < .01$ . Based on the results of the scree plot and the eigenvalue greater than one criterion, three factors were retained in the final analysis. Following the criteria listed previously for the deletion of items, retention of factors, and successive factoring, Items 14 and 31 were deleted. Item 14 did not load on any factor and Item 31 had a low communality value. This resulted in a 17-item three-factor solution that nearly mirrored the 16-item three-factor solution identified in the initial development sample.

Factor 1 accounted for 26% of the item variance and consisted of 9 items with coefficients ranging from .47 to .78. Factor 2 accounted for 16% of the item variance and consisted of 5 items with coefficients ranging from .57 to .76. Finally, Factor 3 accounted for 5% of the item variance and consisted of 3 items with coefficients ranging from .49 to .66. The factor pattern coefficients and the communalities of the 17-item three-factor solution are presented in Table 4.

As shown in Table 6, the correlations among all factors were statistically significant. The factors that correlated the highest were Factor 1 *Self-Appraisal of Knowledge/Skills* and Factor 2 *Worldview* ( $r = .36$ ). This was followed by Factor 2 *Worldview* and Factor 3 *Help-Seeking Behavior/Personal Beliefs* ( $r = -.29$ ). The factors that correlated the lowest were Factor 3 *Help-Seeking Behavior* and Factor 1 *Self-Appraisal of Knowledge/Skills* ( $r = -.19$ ).



**Table 6.** Factor Correlation Matrix for the Three-Factor Solution (Cross-Validation Sample).

	Self-Appraisal Knowledge/Skills	Worldview	Help-Seeking Behavior
Self-appraisal knowledge/skills	1.000	.362**	.194*
Worldview	.362**	1.000	-.291**
Help-seeking behavior	.194*	-.291**	1.000

\*p < .05. \*\*p < .01.

*Internal consistency reliability.* Coefficient  $\alpha$ s were computed to assess the internal consistency of the overall 17 Likert-type scale items of the PKA-HTQ and its three subscales. The overall questionnaire had an acceptable  $\alpha$  of .81. The subscale *Self-Appraisal of Knowledge/Skills* had an  $\alpha$  of .87, indicating high reliability. The subscale *Worldview* had an  $\alpha$  of .79, indicating satisfactory reliability. The *Help-Seeking Behavior/Personal Beliefs* subscale had an  $\alpha$  of .71, indicating satisfactory reliability.

### Comparison of Factor Loadings and Structures Across Samples

The factor loadings and the factor structure of data from the initial validation sample and from the cross-validation sample were compared to determine (a) whether items (variables) were assigned to the same factors across samples and (b) whether individual item factor loadings were roughly equivalent in magnitude—that is, squared differences below .04—across samples (Osborne & Fitzpatrick, 2012). As shown in Table 4, the 8 items that loaded strongly on Factor 1 in the initial validation sample also loaded strongly on Factor 1 in the cross-validation sample. However, an additional item, Item 22 (*My social work curriculum has adequately prepared me to work with victims of human trafficking*), loaded on Factor 1 in the cross-validation sample. The items that loaded strongly on Factors 2 and 3 were congruent across samples.

Squared differences were calculated to determine if the factor loadings across samples were equivalent in magnitude. Squared differences of .04 or above are considered volatile, indicating individual item factor loadings are nonequivalent in magnitude (Osborne & Fitzpatrick, 2012). The squared differences in the factor loadings ranged from 0.0001 to 0.0146, indicating that the largest difference between the standardized factor loadings was [.01], below the magnitude of .04, showing that there were no meaningful differences and that the factor loadings across samples were roughly equivalent in magnitude.

### Discussion and Applications to Social Work

The aim of the current study was to develop and assess the psychometric properties—specifically, the factor structure—of the PKA-HTQ, a newly developed instrument designed to measure the perceptions, knowledge, and attitudes of social work

students regarding human trafficking and human trafficking victims. An EFA and Cronbach  $\alpha$  estimates were conducted to examine the initial validity and internal consistency of the PKA-HTQ. Findings from the initial EFA conducted on data from the initial validation sample revealed a three-factor structure with 16 items: self-appraisal of knowledge/skills (8 items); worldview (5 items); and help-seeking behavior/personal beliefs (3 items). Findings from the replication EFA revealed a three-factor structure with 17 items. The 17-item three-factor structure identified in the cross-validation sample closely mirrored the 16-item three-factor structure identified in the initial validation sample. The 8 items that clustered on Factor 1 in the initial validation sample clustered on Factor 1 in the cross-validation sample.

An additional item, Item 22, loaded on Factor 1 in the cross-validation sample. While Item 22 (*My social work curriculum has adequately prepared me to work with victims of human trafficking*) loaded on a factor with other items that share the same conceptual meaning, it appears that the item may be too specific. This is so because 10% of the survey respondents were nonsocial work majors, and many of the respondents (across samples) who have declared social work as a major were of varying levels of classification (i.e., freshmen, sophomore, junior, senior, or graduate). These students may not have known what their respective social work curriculum entailed at the time of the administration of the survey, particularly with respect to specific social problems and client populations such as human trafficking and human trafficking victims. If Item 22 would have been deleted, the factor structure would be truly congruent, as the items that loaded on Factors 2 and 3 were congruent across samples. Aside from Item 22, the replication of the three factors indicated that the lowest threshold for replicability was met—that is, having items assigned to the same factors across samples (Osborne & Fitzpatrick, 2012). The requirement for strong replication was met as well; the magnitude of the factor loadings of individual items was equivalent across samples, meeting the stronger requirement for replication EFA (Osborne & Fitzpatrick, 2012).

The PKA-HTQ appears to be a multidimensional instrument with two clear factors (i.e., *Self-Appraisal of Knowledge/Skills and Worldview*) and a weaker, but salient third factor (i.e., *Help Seeking Behavior and Personal Beliefs*). In addition, results of the EFAs revealed that Items 14, 15, and 31 did not load significantly on a factor. For both samples, Item 14 (*American citizens are not victims of human trafficking*) did not load on any factor. Usually, the word “not” in a questionnaire could lead to misinterpretation; some may agree with the statement when they are in agreement and others may agree when they are in disagreement, making it difficult for researchers to determine which is which (Rubin & Babbie, 2011).

The overall 16-item PKA-HTQ and the subscale *Self-Appraisal of Knowledge/ Skills* had high reliabilities. The *Worldview* subscale had adequate reliability and the *Help Seeking Behaviors and Personal View* subscale had low reliability, a Cronbach  $\alpha$  of .66, below the desired minimum estimate of .70. This could be attributed to the small number of items in the

*Help Seeking Behavior/Personal Beliefs* subscale, indicating a need to generate additional items for this subscale to determine if increasing the number of items would increase its reliability. Similar Cronbach  $\alpha$  estimates were identified in the cross-validation sample for the overall questionnaire and the *Self-Appraisal of Knowledge/Skills* and the *Worldview* subscales. The Cronbach  $\alpha$  estimate for the *Help Seeking Behavior/Personal Beliefs* subscale was .04 higher than the estimate found in the initial validation sample and barely met the desired minimum estimate of .70. The Cronbach  $\alpha$  estimate was .71, further indicating the need to generate additional items for this subscale. The Cronbach  $\alpha$  estimates across samples indicate that the overall questionnaire and its three subscales are relatively stable (DeVellis, 2012).

The initial validity and reliability of the PKA-HTQ were established and replicated in the current study, indicating that the results were not a one chance occurrence. While cross-population generalization could not be assumed, a major strength of the study is that people of color were adequately represented in the testing of the PKA-HTQ, as one of the study sites is a minority serving institution. This is important because concerns have been noted that people of color have not been adequately represented in the development or testing of measurement instruments (Witkin, 2001, as cited in Engel & Schutt, 2009). In light of this strength, it should be noted that data were not collected on the variables of race/ethnicity, limiting our knowledge about the representativeness of the sample to the larger social work student population.

Additionally, findings should be interpreted in the context of the study limitations and should not be generalized beyond these samples until findings can be replicated with other samples. The violation of normality must be acknowledged, as many of the questionnaire items were positively and negatively skewed across samples. While principal axis factoring method was used in the current study, the recommended method when data violate the assumption of multivariate normality, the solution may be degraded (Tabachnick & Fidell, 2012). Moreover, if data conform to normality, irrespective of the method of factor analysis, the solution is enhanced (Tabachnick & Fidell, 2012), yielding clearer, more replicable factor patterns (Floyd & Widaman, 1995). Clearly, further research on the 26-Likert type items of the PKA-HTQ is needed to determine whether the same 16-item three-factor structure version manifests. However, at this early stage of development, the PKA-HTQ would benefit from further development and item refinement.

Despite the aforementioned limitations, the creation of the PKA-HTQ is a step toward developing an empirically sound measure to assess social work students' perceptions, attitudes, and knowledge regarding the evolving social issue of human trafficking. Increasingly human trafficking victims are coming into contact with social service, criminal justice, educational, and health care system service providers; therefore it is incumbent upon social work educators and curricula developers to ensure that prospective and current social workers are trained to advocate for and provide the most appropriate, high quality and effective services to victims of human trafficking. It is only

through the use of reliable and valid tools that social work educators can assess the training and educational needs of students and plan accordingly. Pending further development and refinement, the PKA-HTQ will provide a useful self-appraisal tool for social work students and evaluative tool for social work educators, field instructors, and facilitators of human trafficking curricula, modules, or workshops. Although this questionnaire was developed for U.S. social work students, it may also be useful for social work practitioners and other helping professionals who work with victims of human trafficking in international settings. Additionally, staff in multidisciplinary agencies may benefit from the use of the PKA-HTQ to gauge their organizations' readiness/preparedness in the area of human trafficking.

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